# THE GENETIC FUNCTION OF MOVEMENT AND ORGANIC SENSATIONS FOR SOCIAL CONSCIOUSNESS.

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A useful psychological distinction, though one that has not received much attention so far, is that between a genetic element and a concrete element. By the latter, we mean a process discoverable in our present mental life by introspection, and incapable of further analysis by the method that discovered it; for instance, the sensation red. The simplicity possessed by a process of this type, as it does not necessarily correlate itself with simplicity of underlying physiological process, is also quite probably not the descendant of equal simplicity in the past of mental development. Such a process, simple as it is from the very outset of the individual life, may be in its mental origin far back in the past of the species a fusion of elements now undiscoverable by direct introspective analysis, yet in some cases to be inferred on other grounds, such as for instance the known history of a sense organ. Elements of this historic significance, primitive ingredients at an earlier stage of mental phylogenesis, may be termed genetic elements; a familiar instance would be the Spencerian 'nervous shock,' interpreted as the psychic aspect of a nervous shock. As regards their qualitative character, it is evident that in some cases genetic elements may, indeed must, have been entirely unlike anything now experienced as a concrete element. In other cases, the genetic elements that long ago became indistinguishably blended into a process not now analyzable, may have been of a quality not different from concrete elements known at this present stage of mental life.

Now the importance of taking account of the concept of genetic elements becomes apparent whenever we attempt to trace the development of any process in the individual mind. It is impossible, assuming only the mental structures discover-

able by our present introspection, to give a continuous and coherent explanation of individual mental growth. There are breaks; the effect is more than the causes; the whole is greater than the structural parts we thought went to compose it. A striking example is to be found in the problem of the rise of social consciousness in the individual. By social consciousness, it is generally agreed, is meant 'ejective' consciousness, the reference of a certain mental process to another mind. Clear, fully realized social consciousness is a late product both in individual development and in the history of the animal mind; its existence in the lower animals is more than doubtful, and its defects in the human child are responsible for the cruelty often displayed by children. The most familiar attempt to explain its rise in the individual child is Professor Baldwin's appeal to imitation. The child, he tells us, early becomes interested in the movements of the persons around him, as possessing much pleasure-pain importance in his life. This interest in and attention to the movements of others leads by virtue of an inborn connection between visual and motor centers to imitation of these movements, whereby the child gets certain experiences. It is thus enabled to interpret the movements it watches, to realize their inner aspect, and to get some consciousness of the mental life of others along with the development of its own. This account of the process of awakening in the social consciousness seems fundamentally probable, but equally evident is the fact that it describes an awakening, not a construction. Given a tendency to project certain mental states into other minds, to refer them outward in an ejective as well as an objective sense, then imitation of movement offers an opportunity; but if you make the child's inference from its own experience to that of others an explanation of the tendency, you are evidently assuming the thing to be explained. How does the child come to have any power at all of thinking of experience as belonging to other minds? Nothing that we can find in our own conscious life at the present time will bridge the gap. We can only say that it is a part of the child's inherited mental constitution to give, when furnished the proper clues, a social interpretation to certain aspects of its experience. Imitation is the only congenital factor here that Professor

Baldwin discusses as such, but the tendency to 'ejectify,' if the word may be pardoned, is equally necessary as an original postulate.

Here, then, is a case where no introspective analysis can discover the element that combines to form a new mental product, the idea of an idea in another mind. I can find marks enough to distinguish the processes which I think of as belonging to my own conscious experience and those which I refer to the conscious life of another. If I take a friend to see a view familiar to myself, I have, as I watch him gazing, an idea of the impression it makes on him, which is obviously distinguished from, though similar to, the impression it makes on me, because it is associated with my perception of the movements of facial expression and gesture by which he expresses his state of mind—visual elements that are not connected with my own enjoyment of the scene. But this does not explain how I came, in the beginning, to give a social interpretation to such movements. I learned by imitation and association with language, what *particular* social interpretation to give them; to understand some of them as expressive of pleasure, others of dislike and so on; but no combination of elements now introspectively discoverable accounts for my giving them social interpretation *überhaupt*.

Is it possible, by investigating the conditions under which the higher forms of animal life developed, to find genetic elements that will meet the requirements of the case? Let us suppose an animal able to form a representation of a mental state, say of alarm, as existing in the consciousness of another animal. Observations on social animals, for instance the Medlicott pigs, indicate that the effect of a particular cry, resulting from alarm in the consciousness of one member of the herd, is to frighten the others, that is, to produce in them a state similar to that in the mind of the vociferating beast. Here there is not necessarily any social consciousness at all. Suppose, however, an animal capable not only of being scared at a certain cry, but of thinking of the author of the cry as scared. It is unnecessary to make any conjecture as to the precise epoch in development when this stage is reached, or whether any animals below man attain it. It is reached somewhere below the

level of human intelligence as we now know it, for we have seen that the ability to form ejective ideas is innate in the human infant. Now the thought of another creature as alarmed may be called an idea or representation of alarm, differing, that is, from the actual emotion as experienced by oneself at the present moment. Into the nature of this difference, again, we need not go; it is with another difference that we are concerned. An animal capable of forming such a 'free idea,' ejectively referred, is also capable of forming an idea or representation of a similar state formerly experienced by itself. How do these two representations come to be distinguished for consciousness? In other words, the mental states expressed by the two remarks, 'How frightened I was!' and 'How frightened he is!' are alike in being representations of alarm and not the actual, present emotion. How did they come to be differentiated? We are not implying, of course, that our animal has any personality ideas such as the use of 'I' and 'he' would involve.

It is a trustworthy principle, in view of the eminently practical conditions that have presided over the whole process of life-development, to assume that whatever is more essential to welfare and survival will make its appearance earlier than that which is less essential. Biological necessities will, generally speaking, precede biological luxuries. And on this principle we are safe in assuming that *certain motor reactions* of coming to the rescue, joining in defense, and so on were developed in response to the cries of a fellow creature long before any sympathetic or social consciousness of that creature's suffering was possible. We know that definite motor response to the voice of the parent animal is innate in a large number of species. Young birds not out of the egg will cease piping if the mother bird gives the alarm note. It is probable that the parent animal also responds by certain innate reactions to cries of alarm or pain from the young. In social animals such reactions are not confined to parents and offspring; a certain cry produced on the part of the wild pigs "a rush of all the fighting members to the spot." Social animals are usually dependent for preservation upon concerted defense. It would therefore be necessary to the life of such a species that certain cries

should stir, when heard, a definite impulse to seek the source of them and fight. The instinct would be so essential, so life-saving to the species, that it bears all the marks of a 'primary' or pure natural selection instinct. How blind, how far from involving any social consciousness, it is, we find well illustrated in Mr. W. H. Hudson's account of the behavior of cattle when one of their number gets into difficulties other than combat—such as being caught in the rocks. They attack the unfortunate with the utmost fury and gore or trample him to death. Mr. Hudson's explanation is that this useless behavior is an illusion of the rescuing instinct; the cries of the animal in distress stir up the fighting impulse in other members of the herd, because usually such cries occur when the animal is attacked by an enemy. There being no enemy in this exceptional case, the vengeance that should be wreaked on the aggressor falls upon the victim. "When the individuals of a herd or family are excited to a sudden deadly rage by the distressed cries of one of their fellows, or by the sight of its bleeding wounds and the smell of its blood, or when they see it frantically struggling on the ground, or in the cleft of a tree or rock, as if in the clutches of a powerful enemy, they do not turn on it to kill but to rescue it." [1]

Mr. Hudson himself is inclined to think, for reasons he does not specify, that the rescuing instinct arose not through natural selection alone but "through an intelligent habit becoming fixed and hereditary." However this may be, we can be tolerably sure that the 'intelligence' originally involved did not comprise any clear ejective consciousness of the other animal's suffering; and one reason is that stated at the beginning of the last paragraph. The motor reaction would be essential to the life of the species; sympathetic consciousness would not be essential. It is of the utmost practical importance that one animal should be stirred to helping activity by the cries of another; that it should form a representation of the other animal's suffering is rather the reverse of necessary; as an unpleasant conscious state, such a representation is more of a disadvantage than a benefit. That such representations ultimately came to be formed was not because they were the best way of secur-

[1] The Naturalist in La Plata, 3rd edition, 342.

ing helpful action; they were a by-product of the growth of representative power, the formation of 'free ideas' in general. Our human sentimental acquaintances with vivid sympathetic consciousness and languid practical philanthropy suggest forcibly enough that a natural selection instinct might be practically more valuable than ejective ideas. If another reason were necessary for the belief that social motor reactions preceded social consciousness, it would be found in the fact that such reactions occur in animals comparatively low down in the scale, while recent work in animal psychology seems to indicate that the power to form 'free ideas' is very limited even in the highest animals.

But if all this be true, we have found the primitive marks of distinction we were looking for between ejective ideas and other ideas of similar content. It is through the social action stimulated by the behavior of others that conscious creatures have been led to social interpretation of that behavior. Let us go back to our animal capable of forming representations on the one hand of its own past alarm, suggested, perhaps, by revisiting the scene of it; and on the other hand, of another animal's alarm suggested by the sound of cries. The whole motor attitude is different in the two cases. These two ideas, necessarily similar in their internal constitution, would differ in the escort of organic and movement sensations accompanying them. In the first case, we should have such sensations centrally or peripherally excited as are the ordinary ingredients of the emotion. In the second, there are, besides, the sensations resulting from the stirring of an innate impulse to certain movements whose outcome is usually the defence or assistance of the animal in difficulty. From the dawn of the power to form ideas, the consciousness produced by manifestations of mental processes in another animal would contain different elements from those going to make up other representative consciousness; and these elements, the genetic elements of which we were in search, are the movement and organic sensations produced by motor reactions of social utility, already on the field before social consciousness develops.